

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Kindly cancel claims 1 - 13 without prejudice, in favor of new claims 14 - 26.

Claims 1 - 13. (Cancelled)

14. (New) A process for producing an Si_3N_4 -coated SiO_2 shaped body from an SiO_2 green body, wherein a precursor which is suitable for forming an Si_3N_4 sintered layer is applied to a surface of the amorphous, open-pore SiO_2 green body, and then the precursor is converted in situ into an Si_3N_4 sintered layer by irradiation with a laser beam.

15. (New) The process of claim 14, wherein the laser beam is the beam from a CO_2 laser.

16. (New) The process of claim 14, wherein the SiO_2 shaped body is a solar crucible, and the precursor is applied to the inner-side surface of the SiO_2 green body.

17. (New) The process of claim 14, wherein the precursor which is suitable for forming an Si_3N_4 sintered layer is selected from the group consisting of Si_3N_4 powder, silicon powder, silicon oxide/carbon mixtures and polysilazanes.

18. (New) The process of claim 17, wherein the precursor is an Si_3N_4 powder.

19. (New) The process of claim 18, wherein the Si_3N_4 powder has a grain size of between 100 nm and 100 μm .

20. (New) The process of claim 18, wherein the Si_3N_4 powder is applied in the form of an Si_3N_4 powder dispersion by spraying the surface of the SiO_2 green body, and is then dried.

21. (New) The process of claim 20, wherein the dispersion contains a dispersant selected from the group consisting of alcohols, acetone and water.

22. (New) The process of claim 19, wherein the Si_3N_4 powder layer has a layer thickness of from 1 to 1000 μm .

23. (New) The process of claim 14, wherein the SiO_2 green body, after the precursor has been applied, is irradiated by a laser beam with a focal spot diameter of at least 2 cm.

24. (New) The process of claim 14, wherein the laser beam has a radiation power density of from 50 W to 500 W per square centimeter.

25. (New) The process of claim 14, wherein the formation of the Si_3N_4 sintered layer takes place at a temperature of between 1000°C and 1600°C, particularly preferably between 1100°C.

26. (New) The process of claim 14, wherein the irradiation is carried out uniformly and continuously.